Fig.1A
(PRIOR ART)

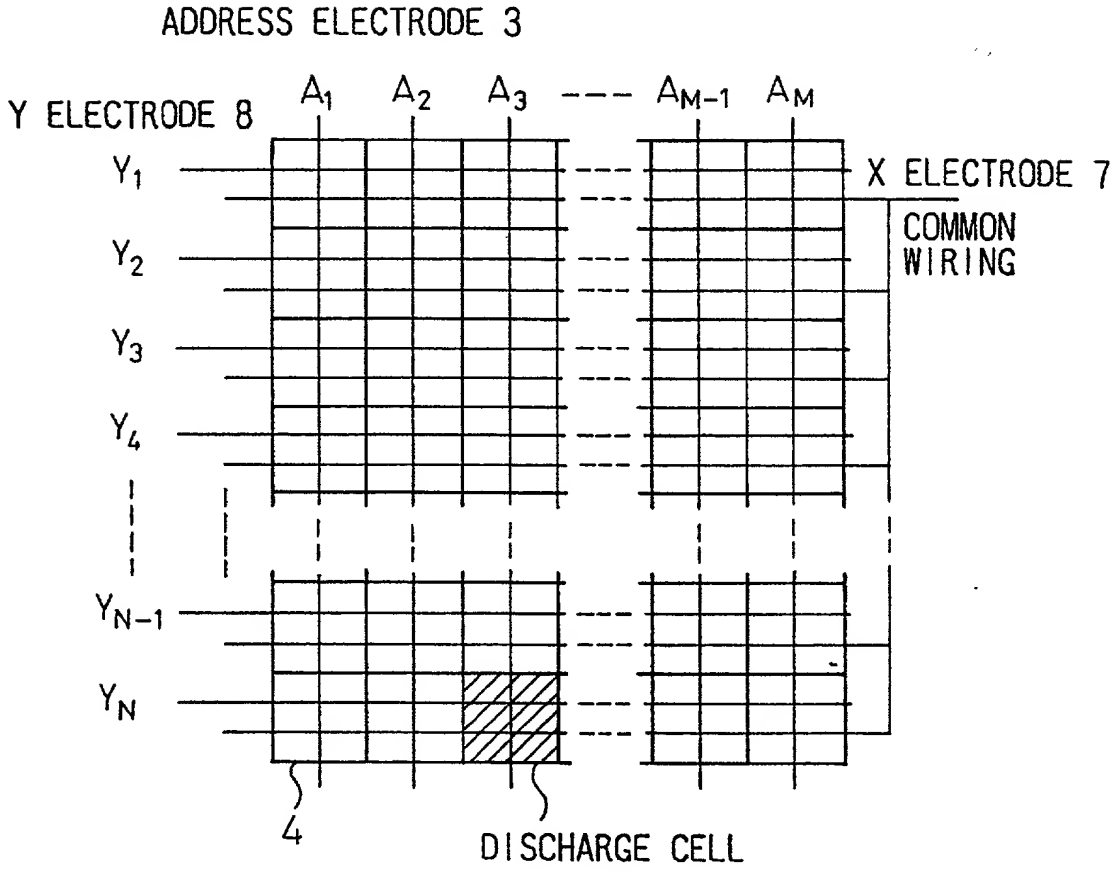


Fig.1B
(PRIOR ART)

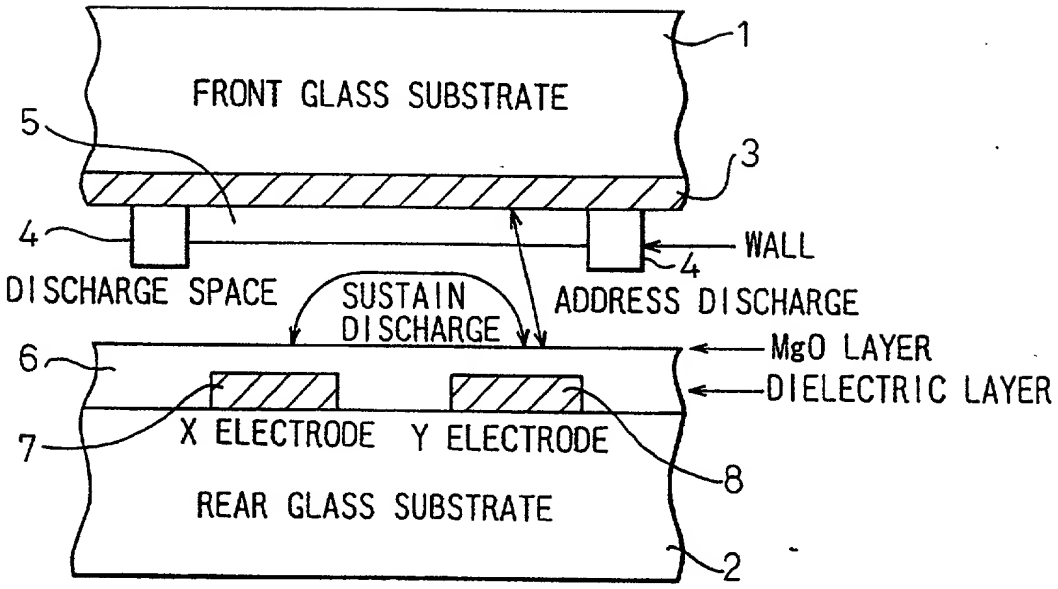


Fig. 2A
(PRIOR ART)

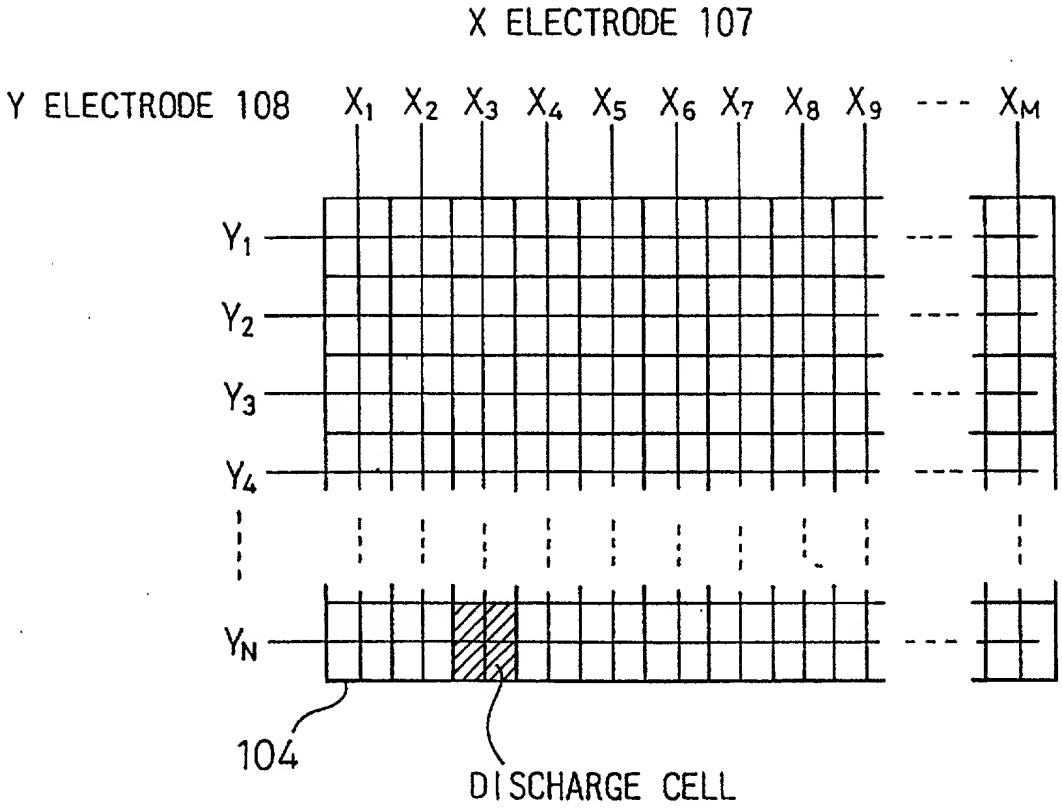


Fig.2B
(PRIOR ART)

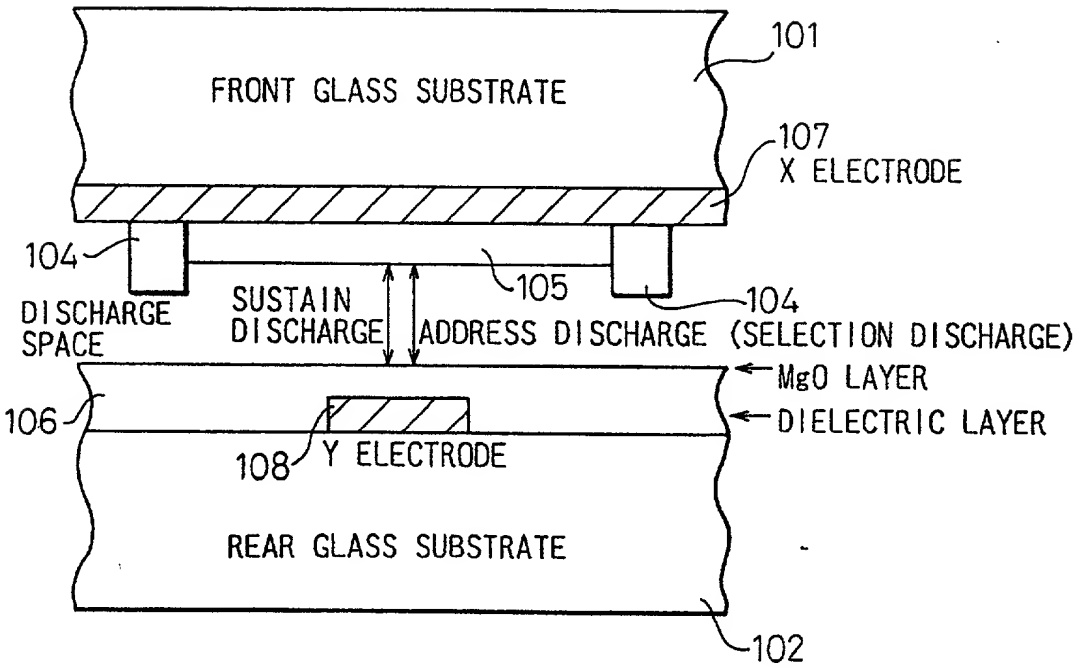
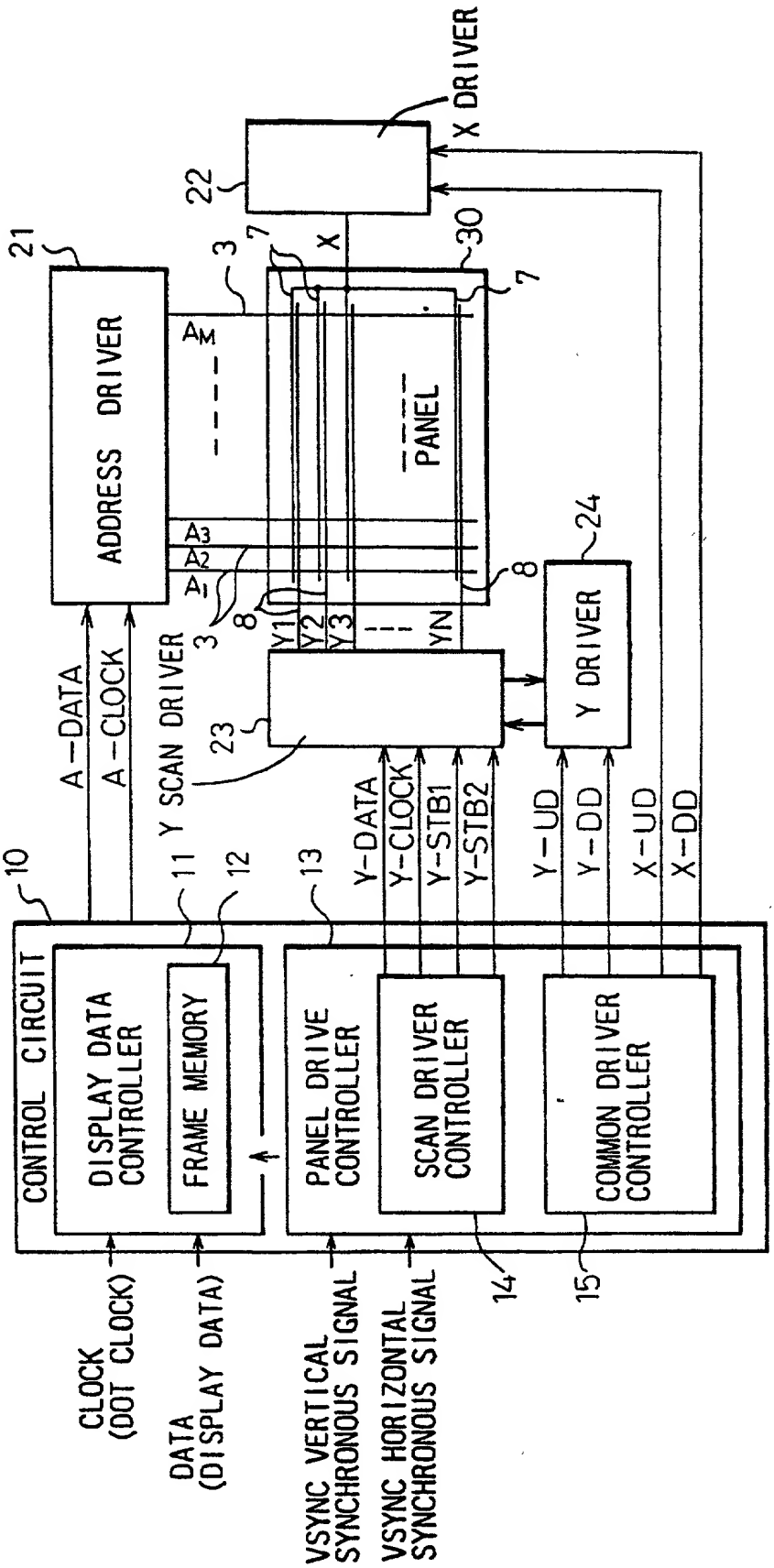


Fig.3
(PRIOR ART)



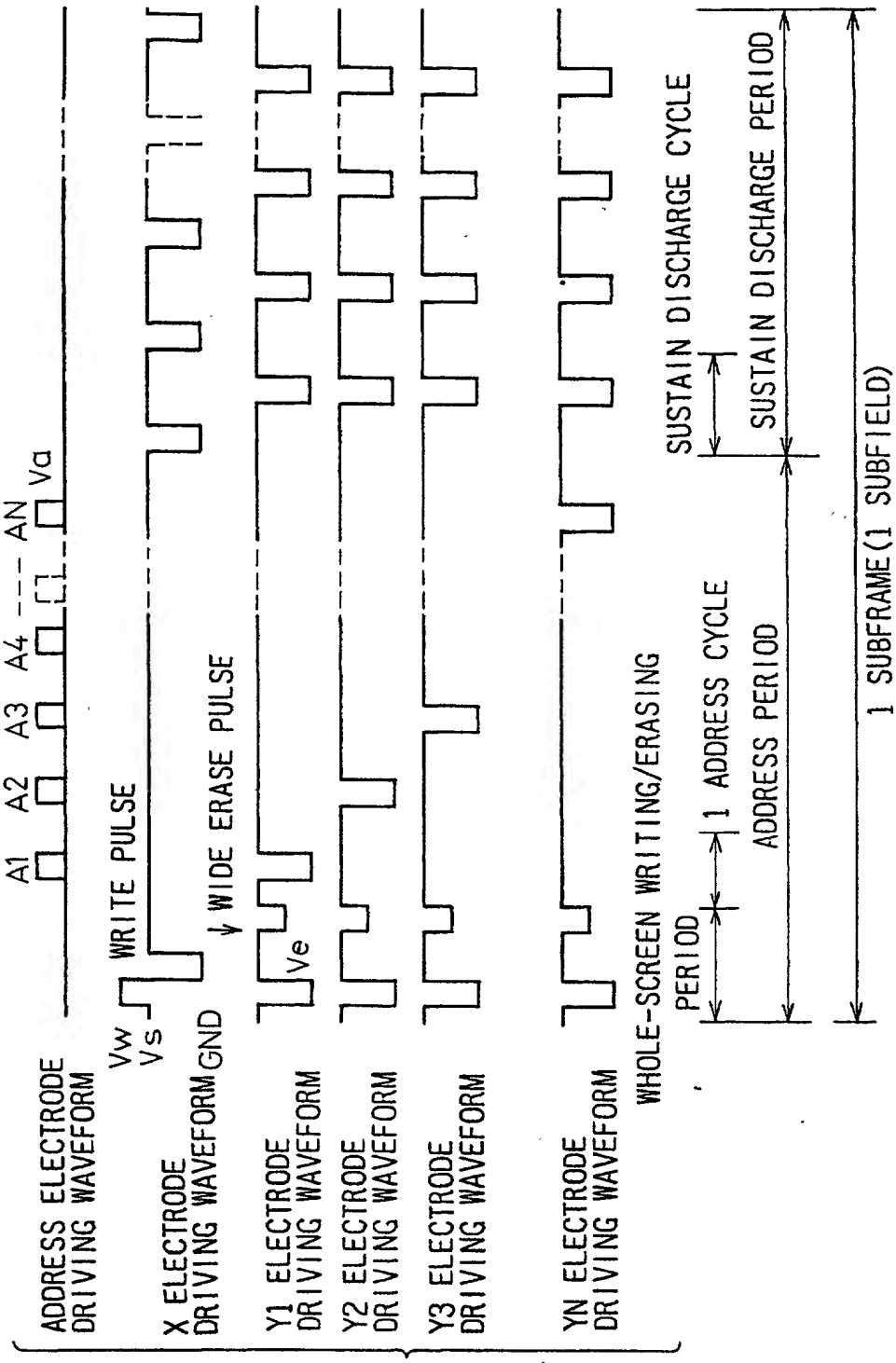


Fig.4
(PRIOR ART)

Fig.5A
(PRIOR ART)

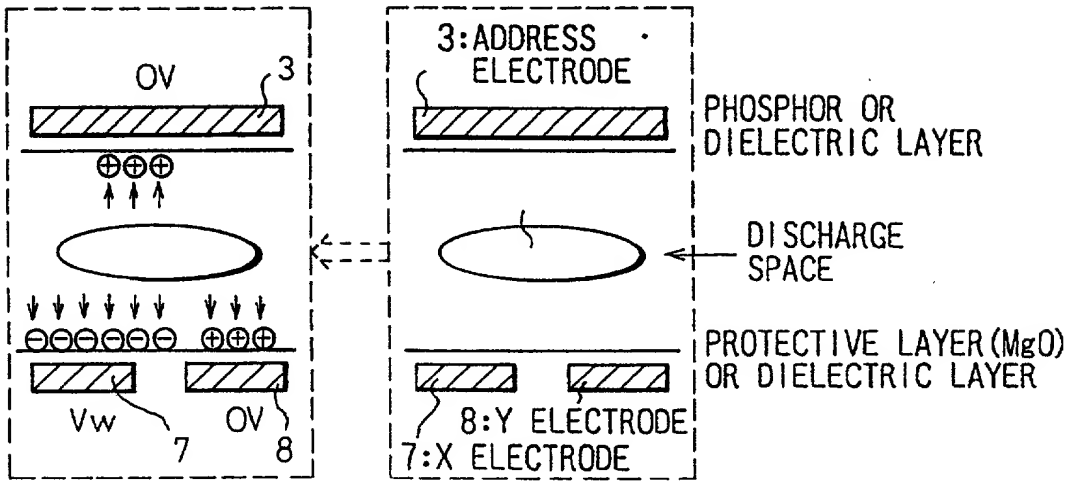


Fig.5B
(PRIOR ART)

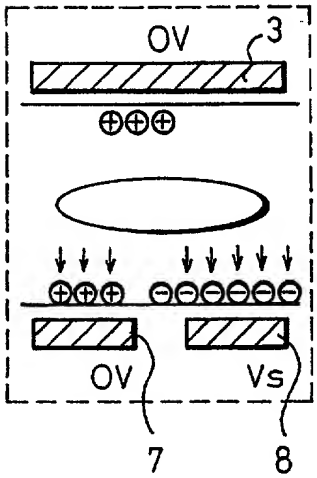


Fig.5C
(PRIOR ART)

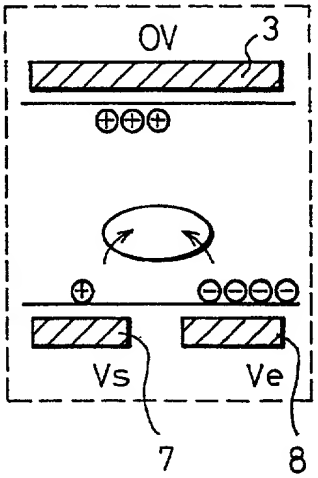


Fig.5D
(PRIOR ART)

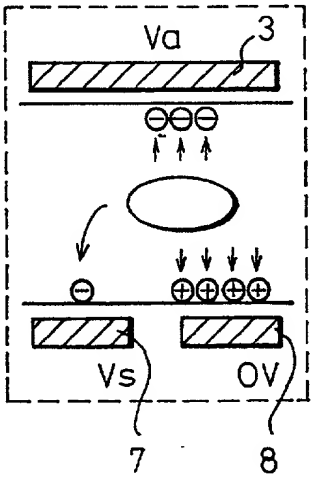
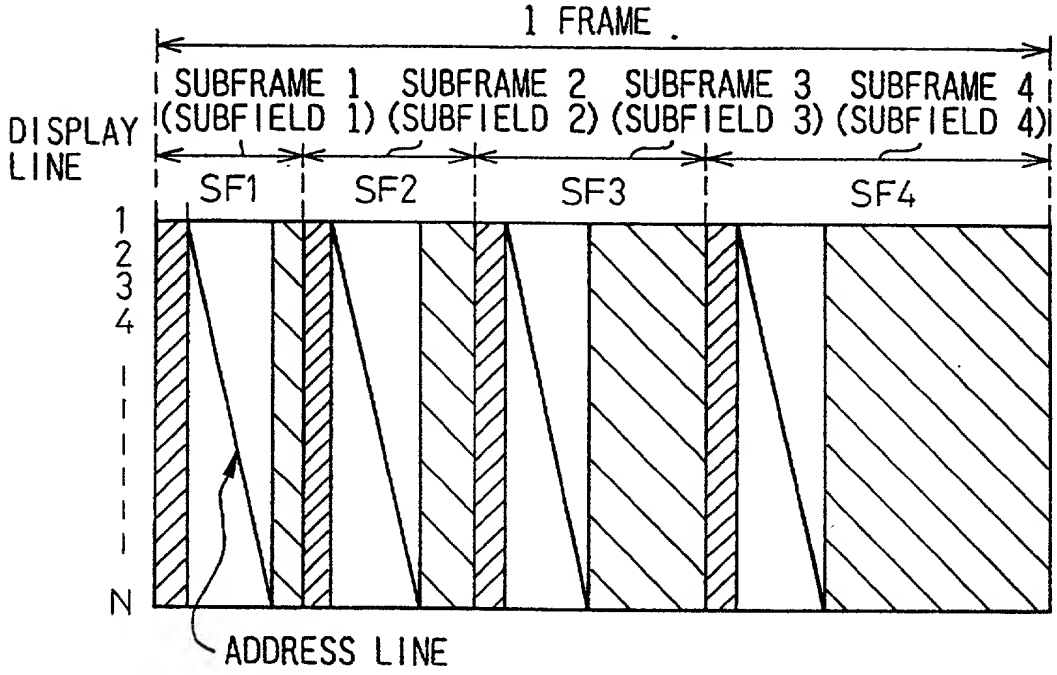


Fig.6
(PRIOR ART)



WHOLE-SCREEN WRITING
ADDRESS
ADDRESS PERIOD
(SELF-ERASE ADDRESS IN A LINE SEQUENCE)

* TO CAUSE WRITING DISCHARGE ALL OVER THE SCREEN, AND SELECT DISPLAY CELLS LINE BY LINE

SUSTAIN DISCHARGE PERIOD

* THE NUMBER OF SUSTAIN DISCHARGES OF EACH SUBFRAME (OR SUBFIELD) IS OF THE RATE 1:2:4:8

Fig.7
(PRIOR ART)

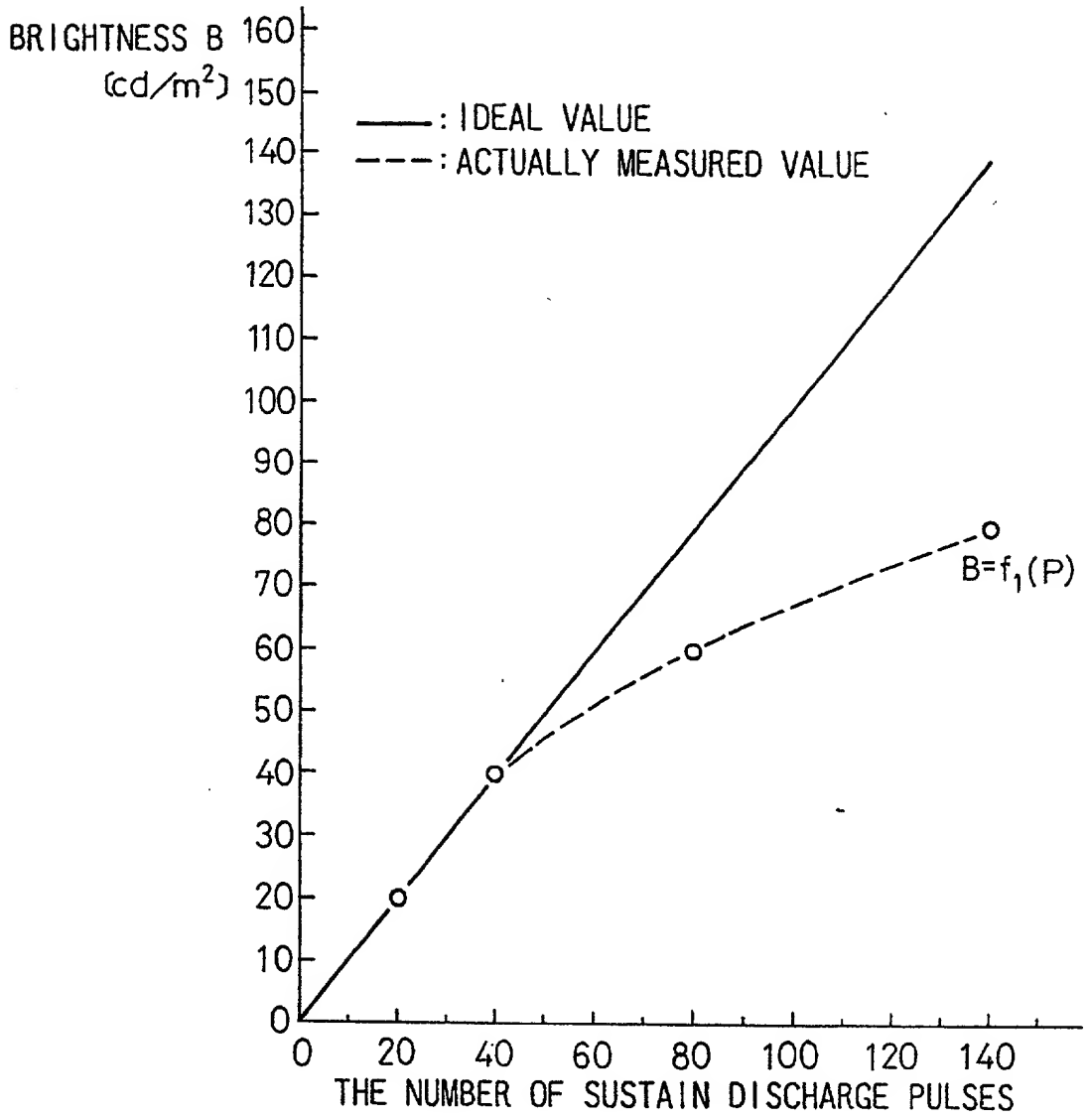


Fig.8

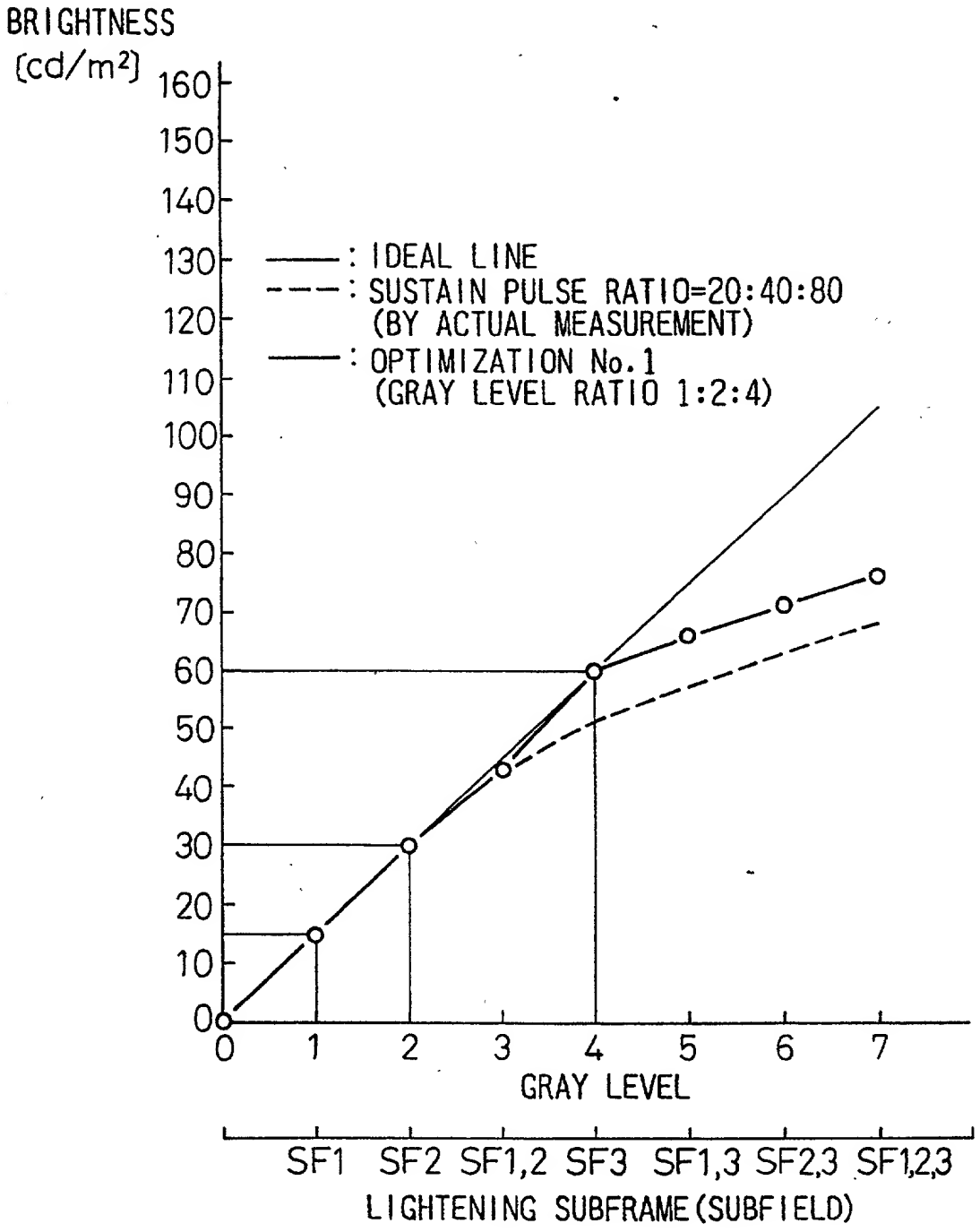

BRIGHTNESS
(cd/m²)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
——: IDEAL LINE
– – –: SUSTAIN PULSE RATIO=20:40:80
(BY ACTUAL MEASUREMENT)
——: OPTIMIZATION No.1
(GRAY LEVEL RATIO 1:2:4)
0 1 2 3 4 5 6 7
GRAY LEVEL
SF1 SF2 SF1,2 SF3 SF1,3 SF2,3 SF1,2,3
LIGHTENING SUBFRAME (SUBFIELD)

Fig.9

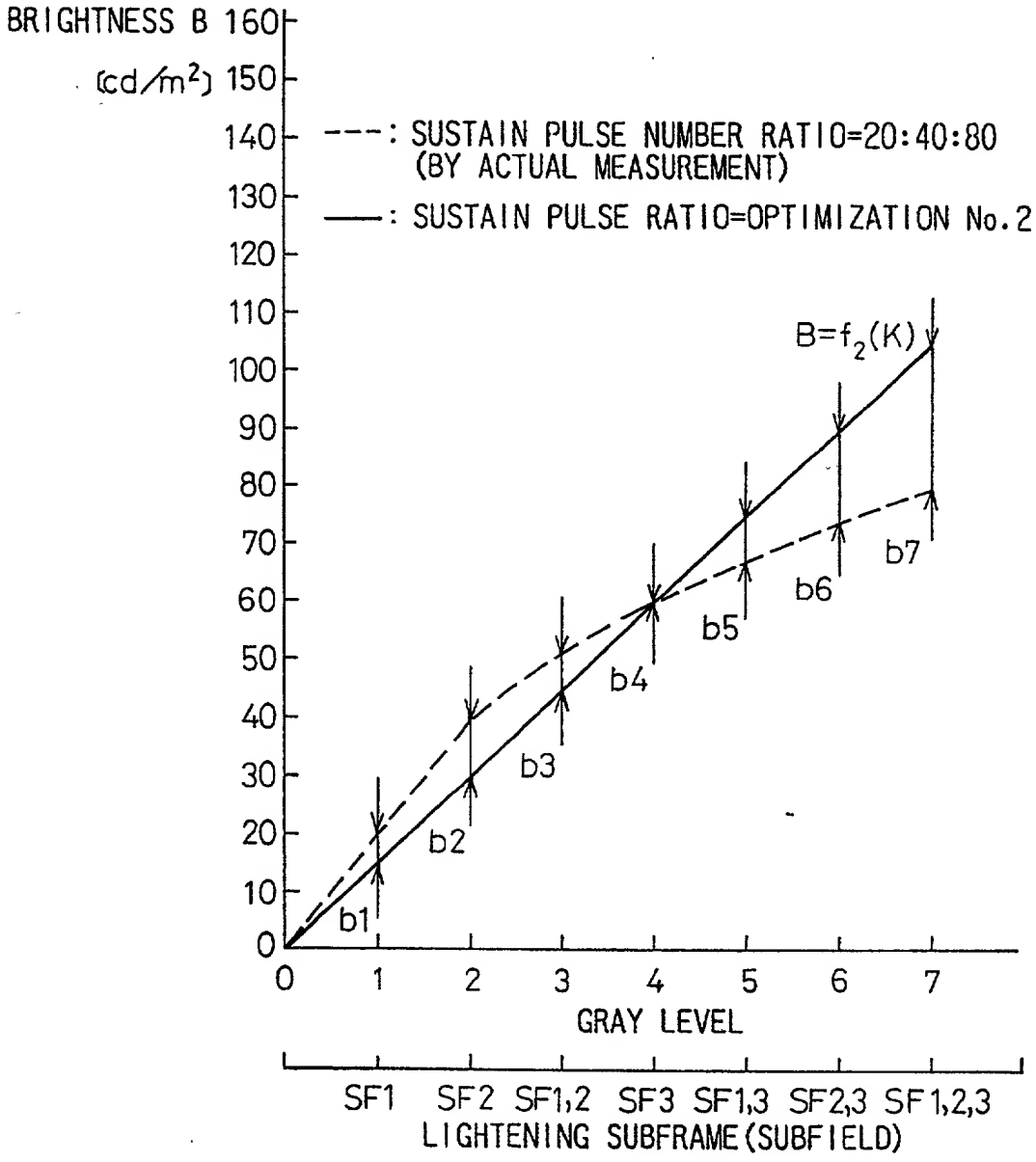

BRIGHTNESS B
(cd/m²)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
---: SUSTAIN PULSE NUMBER RATIO=20:40:80
(BY ACTUAL MEASUREMENT)
——: SUSTAIN PULSE RATIO=OPTIMIZATION No.2
B=f2(K)
b1
b2
b3
b4
b5
b6
b7
0
1
2
3
4
5
6
7
GRAY LEVEL
SF1
SF2
SF1,2
SF3
SF1,3
SF2,3
SF1,2,3
LIGHTENING SUBFRAME(SUBFIELD)

Fig.10

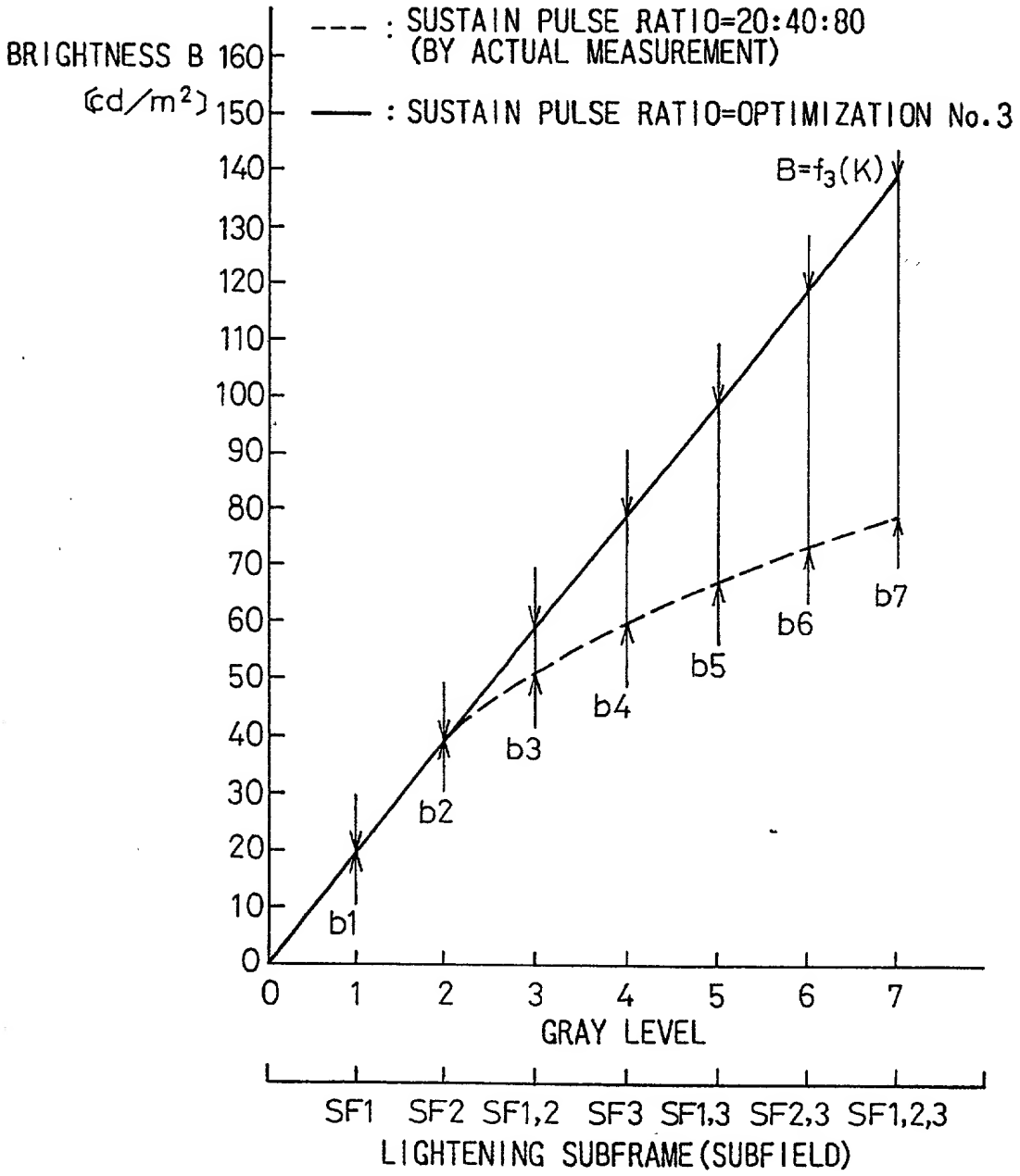

--- : SUSTAIN PULSE RATIO=20:40:80
(BY ACTUAL MEASUREMENT)
—— : SUSTAIN PULSE RATIO=OPTIMIZATION No.3
BRIGHTNESS B (cd/m²)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
B=f3(K)
b1
b2
b3
b4
b5
b6
b7
0 1 2 3 4 5 6 7
GRAY LEVEL
SF1 SF2 SF1,2 SF3 SF1,3 SF2,3 SF1,2,3
LIGHTENING SUBFRAME (SUBFIELD)

Fig.11A

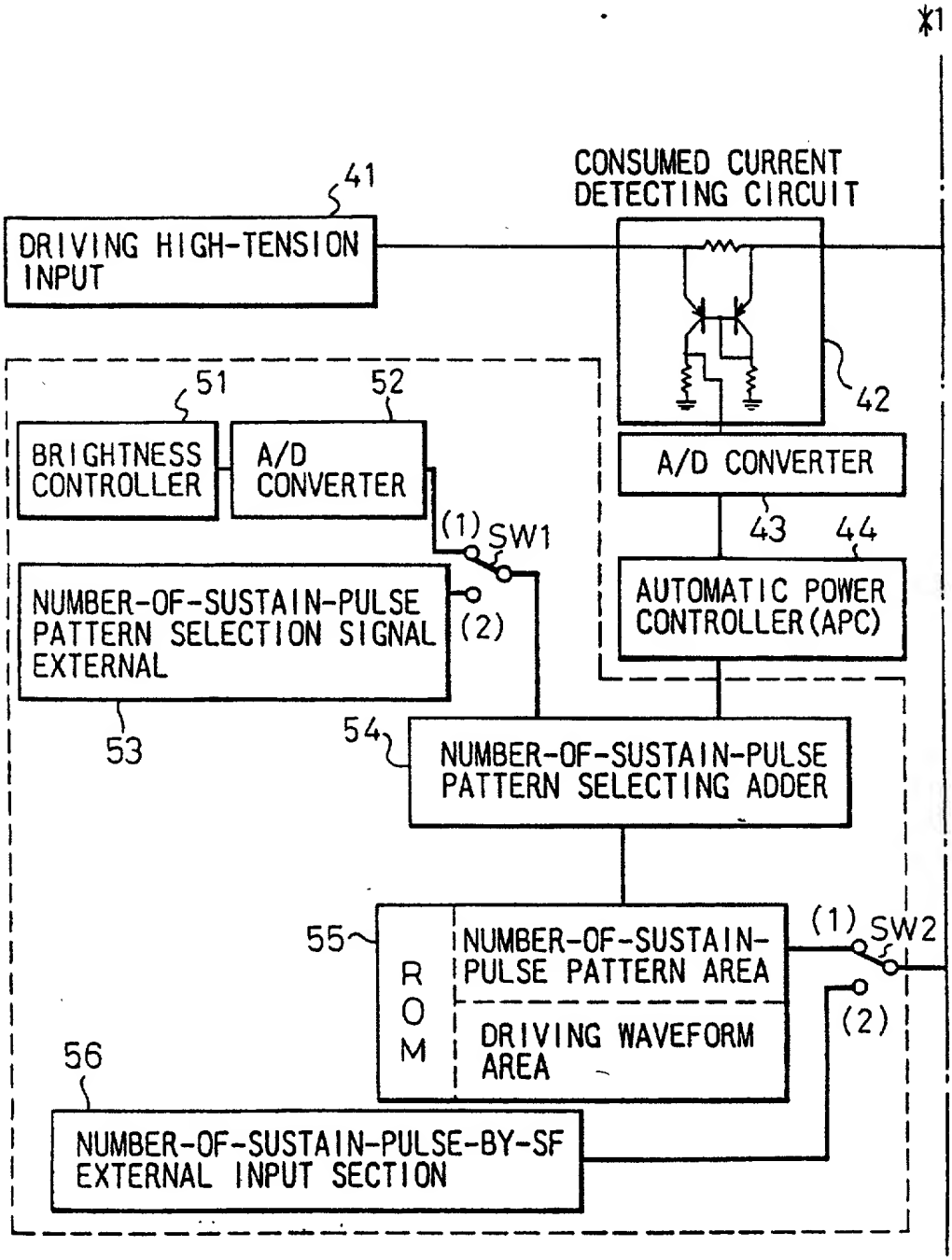
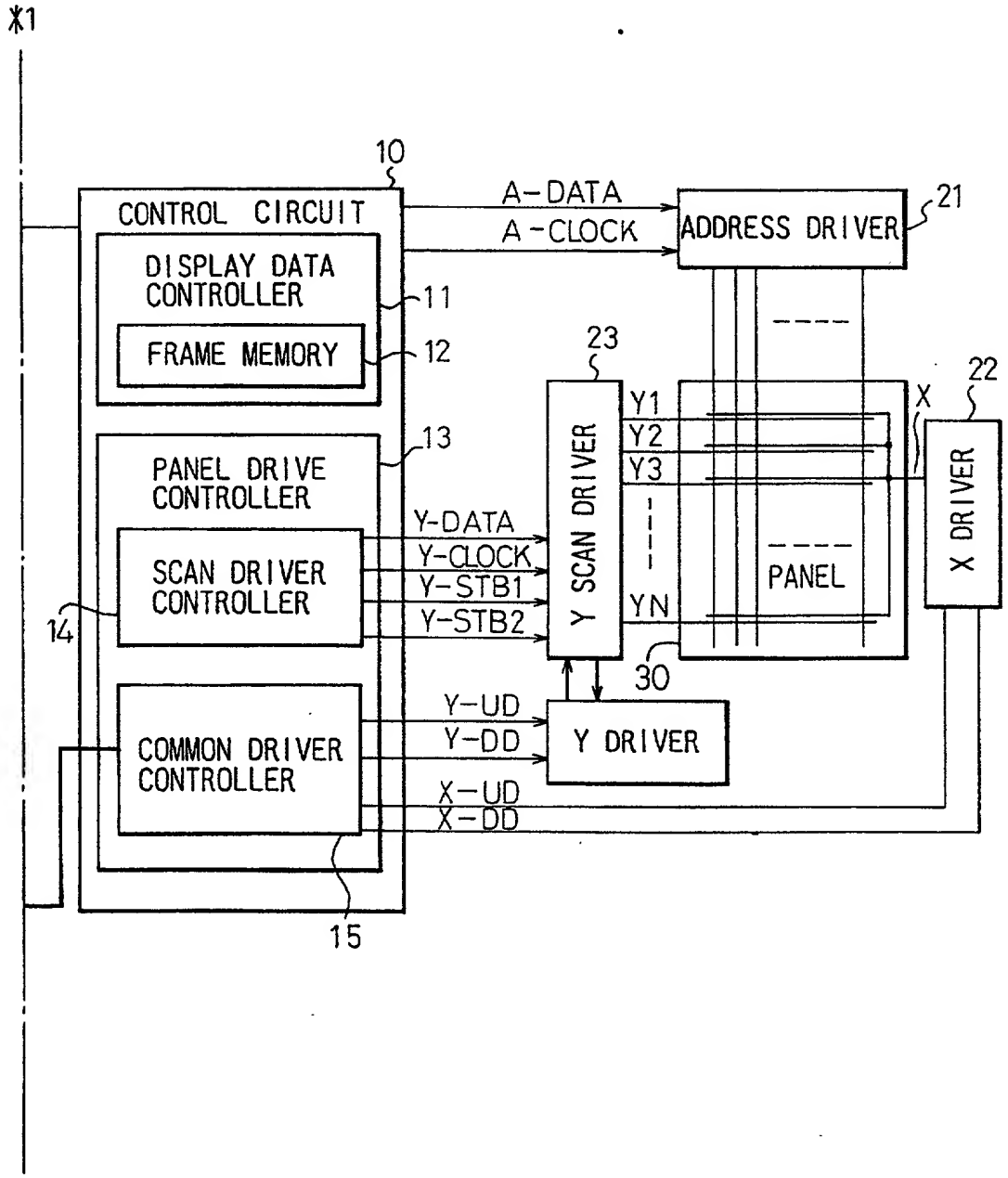

*1
CONSUMED CURRENT DETECTING CIRCUIT
41
DRIVING HIGH-TENSION INPUT
42
51
52
BRIGHTNESS CONTROLLER
A/D CONVERTER
A/D CONVERTER
(1)
SW1
43
44
NUMBER-OF-SUSTAIN-PULSE PATTERN SELECTION SIGNAL EXTERNAL
(2)
AUTOMATIC POWER CONTROLLER(APC)
53
54
NUMBER-OF-SUSTAIN-PULSE PATTERN SELECTING ADDER
55
ROM
NUMBER-OF-SUSTAIN-PULSE PATTERN AREA
DRIVING WAVEFORM AREA
(1)
SW2
(2)
56
NUMBER-OF-SUSTAIN-PULSE-BY-SF EXTERNAL INPUT SECTION

Fig.11B


X1
10
CONTROL CIRCUIT
DISPLAY DATA CONTROLLER
11
FRAME MEMORY
12
PANEL DRIVE CONTROLLER
13
SCAN DRIVER CONTROLLER
14
COMMON DRIVER CONTROLLER
15
A-DATA
A-CLOCK
ADDRESS DRIVER
21
Y-DATA
Y-CLOCK
Y-STB1
Y-STB2
23
Y SCAN DRIVER
Y1
Y2
Y3
YN
PANEL
X
22
X DRIVER
30
Y-UD
Y-DD
Y DRIVER
X-UD
X-DD